**IN THE UNITED STATES PATENT AND TRADEMARK OFFICE**

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| Applicant(s): Jackson<br><br>Application No.: 09/752,152<br><br>Filed: 12/29/2000<br>Title: Local Area Network with Electrochemical Power Source<br><br>Attorney Docket No.: 120-235<br>Nortel: 13360RN | Group Art Unit: 2661<br><br>Examiner: Phunkulh |

Commissioner for Patents
P.O. Box 1450
Alexandria, VA 22313-1450

PROPOSED RESPONSE AFTER FINAL-
TO BE DISCUSSED DURING INTERVIEW

Dear Sir:

Entry of the below amendments and remarks, made in response to the Final Office Action of June 23, 2006, is respectfully requested pursuant to 37 C.F.R. §1.116(a).

In the claims:

1. (currently amended) A central network device for use in a power integrated local area network, the central network device comprising:

an electrochemical power source in the central networking device; and

a network interface configured to communicate with a plurality of member network devices via a combined power/data link and to deliver both power from energy stored by the electrochemical power source and data from the central network device to at least one selected member network device via the combined power/data link, the at least one selected member network device being capable of accepting power over the power integrated local area network;

wherein the electrochemical power source is configured to provide back up power to the at least one selected member network device in the event of an interruption of delivery of primary power to the central network device.

2. (original) A central network device according to claim 1 wherein the power integrated local area network is configured to execute the Ethernet protocol.

3. (original) A central network device according to claim 1, further comprising networking logic chosen from the group consisting of a switch, a hub, a router, and a multiplexer.

4. (original) A central network device according to claim 1, wherein the power integrated local area network is configured to operate according to a Power Ethernet Standard.

5. (original) A central network device according to claim 4, the central network device being configured to deliver power and data through an MDI-X compliant port.

6. (original) A central network device according to claim 1, further comprising a housing shared by the electrochemical power source and the network interface.

7. (original) A central network device according to claim 1, further comprising power rectification circuitry.

8. (original) A central network device according to claim 7, further comprising an AC to DC converter.

9. (original) A central network device according to claim 7, further comprising a DC to DC converter.

10. (original) A central network device according to claim 1, wherein the electrochemical power source comprises a rechargeable battery.

11. (original) A central network device according to claim 10, wherein the rechargeable battery is configured to be charged by an AC to DC converter.

12. (original) A central network device according to claim 10, wherein the rechargeable battery is configured to provide power to a DC to DC converter, the DC to DC converter being configured to power the at least one selected member network device.

13. (cancelled)

14. (original) A central network device according to claim 1, wherein the plurality of member network devices comprises a network appliance.

15. (currently amended) A central network device according to claim 14, wherein the network appliance comprises:

a peripheral device configured to transmit data to the power integrated local area network;

a communication engine operably coupled with the peripheral device, the communication engine configured to control data transmission via the power integrated local area network, wherein the power integrated local area network includes links that simultaneously deliver both power and data; and

an appliance network interface operably coupled with the communication engine, the appliance network interface being configured to transmit data to and to receive data from the power integrated local area network via the combined power/data link, data transfer between the peripheral device and the power integrated local area network being forwarded via the appliance network interface.

16. (currently amended) A power integrated local area network, the network comprising:

a plurality of member network devices; and

a central network device configured to communicate with the plurality of member network devices via a plurality of combined power/data links, and to deliver both power, from energy stored in an electrochemical power source in the central network device and data from the central network device, to at least one selected member network device that is capable of accepting data and power from the central network device via a combined power/data link coupled to the at least one selected member network device;

wherein the electrochemical power source is configured to provide back up power to the at least one selected member network device in the event of an interruption of delivery of primary power to the central network device.

17. (currently amended) A central network device for use in a power integrated local area network, the central network device comprising:

networking logic, configured to communicate with a plurality of member network devices via a corresponding plurality of combined power/data links, the combined power/data links for simultaneously providing both power and data to the plurality of member network devices; and

electrochemical power source means for providing power to at least one selected member network device via a combined power/data link associated with the at least one selected member, the selected member network device being capable of accepting power over the combined power/data link in the power integrated local area network;

wherein the electrochemical power source is configured to provide back up power to the at least one selected member network device in the event of an interruption of delivery of primary power to the central network device.

18. (original) A central network device according to claim 17, wherein the power integrated local area network is configured to execute the Ethernet protocol.

19. (original) A central network device according to claim 17, wherein the networking logic is chosen form the group consisting of a switch, a hub, a router, and a multiplexer.

20. (original) A central network device according to claim 17, wherein the power integrated local area network is configured to operate according to a Power Ethernet Standard.

21. (original) A central network device according to claim 20, the central network device being configured to deliver power and data through an MDI-X compliant port.

22. (original) A central network device according to claim 17, further comprising a housing shared by the electrochemical power source means and the networking logic.

23. (original) A central network device according to claim 17, further comprising power rectification circuitry.

24. (original) A central network device according to claim 13, further comprising an AC to DC converter.

25. (original) A central network device according to claim 23, further comprising a DC to DC converter.

26. (original) A central network device according to claim 17, wherein the electrochemical power source means comprises a rechargeable battery.

27. (original) A central network device according to claim 26, wherein the rechargeable battery is configured to be charged by an AC to DC converter.

28. (original) A central network device according to claim 26, wherein the rechargeable battery is configured to provide power to a DC to DC converter, the DC to DC converter being configured to power the at least one selected member network device.

29. (cancelled)

30. (original) A central network device according to claim 17, wherein the plurality of member network devices comprises a network appliance.

31. (original) A central network device according to claim 30, wherein the network appliance comprises:

a peripheral device configured to transmit data to the power integrated local area network;

a communication engine operably coupled with the peripheral device, the communication engine configured to control data transmission via the power integrated local area network; and

an appliance network interface operably coupled with the communication engine, the appliance network interface being configured to transmit data to and to receive data from the power integrated local area network, data transfer between the peripheral device and the power integrated local area network being forwarded via the appliance network interface.

32. (currently amended) A method for powering a local area network using power from a central network device, the method comprising:

selecting at least one member network device capable of accepting power over the local area network on a combined power/data link in the local area network, the combined power/data link for simultaneously providing both power and data to the at least one member network device; and

providing backup power, from energy stored by an electrochemical power source in the central network device, to the at least one selected member network device via the combined power/data link in the event of an interruption of delivery of primary power to the central network device.

33. (original) A method according to claim 32, wherein the method comprises:

executing the Ethernet protocol on the local area network.

34. (original) A method according to claim 32, wherein the method comprises:

housing the electrochemical power source in a common enclosure with networking logic chosen from the group consisting of a switch, a hub, a router, and a multiplexer.

35. (original) A method according to claim 32, wherein the method comprises:

operating the local area network according to a Power Ethernet Standard.

36. (original) A method according to claim 35, wherein the method comprises:

delivering power and data through an MDI-X compliant port.

37. (original) A method according to claim 32, wherein the method comprises:

housing rectification circuitry in a common enclosure with the electrochemical power source.

38. (original) A method according to claim 37, wherein the method comprises:

housing an AC to DC converter in the common enclosure.

39. (original) A method according to claim 37, wherein the method comprises:

housing a DC to DC converter in the common enclosure.

40. (original) A method according to claim 32, wherein the method comprises:

housing a rechargeable battery in a common enclosure with networking logic.

41. (original) A method according to claim 40, wherein the method comprises:

charging the rechargeable battery with an AC to DC converter.

42. (original) A method according to claim 40, wherein the method comprises:

delivering power from the rechargeable battery to a DC to DC converter; and

delivering power from the DC to DC converter to the at least one selected member network devices.

43. (cancelled)

44. (original) A method according to claim 32, wherein the method comprises:

delivering power from the electrochemical power source to a network appliance.

45. (currently amended) A method according to claim 44, wherein the method comprises delivering power to a network appliance that comprises:

a peripheral device configured to transmit data to the local area network;

a communication engine operably coupled with the peripheral device, the communication engine configured to control data transmission via the local area network; and

an appliance network interface operably coupled with the communication engine, the appliance network interface being configured to transmit data to and to receive data from the local area network, data transfer between the peripheral device and the local area network being forwarded via the appliance network interface <u>via combined power data links, each of the combined power/data links for simultaneously deliver both power and data to the plurality of member network devices</u>.

46. (currently amended) A central network device for use in a power integrated local area network, the central network device comprising:

a housing;

networking logic, enclosed by the housing, configured to communicate with a plurality of member network devices via a plurality of combined power/data links, each of the combined power/data links for simultaneously deliver both power and data to the plurality of member network devices;

an electrochemical power source, sharing the housing with the networking logic, for storing energy to provide power for the member network devices via the plurality of combined power/data links in the event of an interruption of delivery of primary power to the central network device; and rectification circuitry, sharing the housing with the networking logic and

the electrochemical power source, wherein the power integrated local area network is configured to execute the Ethernet protocol.

47. (currently amended) A method for powering a local area network using power from a central network device, the method comprising:

housing an electrochemical power source in a common enclosure with networking logic configured to communicate with a plurality of member network devices via a plurality of combined power/data links, each of the combined power/data links for simultaneously deliver both power and data to the plurality of member network devices ;

rectifying primary power that is delivered to the central network device, to charge the electrochemical power source;

delivering power stored by the electrochemical power source to at least one member device of the plurality of member network devices via at least one of the combined power/data links of the plurality of power/data links; and

executing the Ethernet protocol on the local area network.

REMARKS

Reconsideration and re-examination is respectfully requested in view of the above amendments and below remarks in response to the final office action of June 23, 2006..

Rejections under 35 U.S.C. §103

Claims 1-4, 6-0, 22-35, 37-47 were rejected under 35 U.S.C. §103(a) as being unpatentable over Cole et al. (U.S. Patent 6,348,8i74) hereinafter Cole, in view of Kamioka et al (U.S. Patent 5,990,577), hereinafter Kamioka.

Cole:

Cole describes a system in which remote nodes are supplied with electrical power using existing network communication links. The communication links are *unused* links, 'For example, the replaced capability may be full duplex transmission. This nevertheless yields the ability to power remote nodes while retaining substantially all of the communication capability of the communication link 30. For example, the capability of half duplex transmission may be retained...' Thus Cole effectively steals 'unused' links to provide power to nodes.

The Examiner states, at page 18 of the final office action, with respect to Applicants' argument:

" Cole discloses the communication link 20 is an Ethernet 10BaseT line ..... used for delivering both data or power to the selected nodes..."

Applicants note that the operative words in the Examiner's characterization of the reference is 'data ***OR*** power.' As describe above, Cole uses the links for either communication, or for power delivery on *unused links*.

Applicants note that they have amended the claim, which was previously directed to 'a combined power/data link' and a 'power integrated network', to recite "*...a combined power/data*

*link... to deliver both power from energy stored by the electrochemical power source and data from the central network device to at least one selected member network device..."* Applicants respectfully submit that the claim language, which is directed at a link that delivers both power and data, clearly distinguishes over Cole, which describes a link which either provided data, or if it is unused, then provides power.

Similar amendments have been made to clarify the other independent claims. For example, claims 15 and 16 have been amended to recite "*...wherein the power integrated local area network includes links that simultaneously deliver both power and data..*" Claims 32 and 45-47 has been amended to recite "*.. each of the combined power/data links for simultaneously deliver both power and data to the plurality of member network devices...*"

Kamioka

Kamioka describes a construction of a power supply that drives signal processing logic in a hub to allow the hub to maintain its function even when power failure occurs. (Kamioka, col. 1, lines 15-16). In particular, Kamioka describes, at column 4, lines 3-7:

"... The power supply circuit 10 is connected with an external ac power supply and provides a rectified and stabilized dc power to the other circuits of the hub 1. The power supply circuit 10 also includes a backup power supply circuit..."

The signal processing circuit performs primary functions of repeating the transmitted signal among nodes in the network and reshaping the signal. The backup power supply circuit is described at column 4 lines 42-46:

"... In the power supply circuit 10, a lead acid battery is typically employed as a backup secondary battery 13. A charging circuit 14 for trickle charging the secondary battery 13 is connected to the +15v output terminal of the ac/dc converter 11...."

No mention or suggestion is found in Kamioka for delivering "... power from energy stored by the electrochemical power source to at least one selected member network device..." as recited in the claims. Rather, Applicants note that the backup battery in Kamioka is used solely for the purpose of delivering power to the hub, not for passing power to downstream network devices.

The Examiner states, at pages 2-3 of the office action:

"... Cole discloses a central network device (the communication device 12...) for use in a power integrated local area network, the central device comprising... an electric power source ... and a network interface configured to communicate with a plurality of member devices (nodes 20...) and to deliver power ... to at least one selected member network device...

Cole fails to explicitly disclose the power source is electrochemical source i.e., battery powered source.

Kamioka, on the other hand, discloses a hub for a local area network ...The power supply circuit further comprises an ac/dc converter for converting an ac current applied from an external ac power supply...

Therefore it would have been obvious to one having ordinary skill in the art at the time of invention was made to apply the teaching of Kamioka especially backup battery power supply in the system taught by Cole for providing a hub equipped with a backup power supply... and providing the hub which is able to avoid breakdown of a whole network system in case of power failure of a defect caused in a power supply wiring without using an expensive uninterruptible power supply facility..."

Applicants disagree with the Examiner's conclusions with regard to the combination of Cole and Kamioka, and respectfully submit that the combination fails to satisfy the burden for establishing a prima facie case of obviousness with regard to the claims of the present invention. As described in M.P.E.P. §2143, 'To establish a *prima facie* case of obviousness, three basic criteria must be met. First, there must be some suggestion or motivation, either in the references themselves or in the knowledge generally available to one of ordinary skill in the art, to modify

the reference or to combine reference teachings. Second, there must be a reasonable expectation of success. Finally, the prior art reference (or references when combined) must teach or suggest all the claim limitations..."

No motivation for the modification suggested by the Examiner

The teaching or suggestion to make the claimed combination and the reasonable expectation of success must both be found in the prior art, not in applicant's disclosure. *In re Vaeck*, 947 F.2d 488, 20 USPQ2d 1438 (Fed. Cir. 1991). The mere fact that references can be combined or modified does not render the resultant combination obvious unless the prior art also suggests the desirability of the combination. *In re Mills*, 916 F.2d 680, 16 USPQ2d 1430 (Fed. Cir. 1990)

The Examiner states in the final office action that motivation for the combination can be found at column 2, line 26-46 of Komioka.

However, this portion of text merely recites:

> "... the backup second battery installed during assembly is exhausted after several days depending upon a capacity of the backup batter. Because of this problem, a user of the hub is required to charge the exhausted secondary battery so as to activate a backup power supply function before starting to use the hub. ... One object of the present invention is to provide a hub equipped with a backup power supply function using a secondary battery which becomes activated immediately after the hub is connected to a network system such as a LAN... Another object of the present invention is to provide a hub which is able to avoid breakdown of a whole network system in case of power failure or a defect caused in power supply wiring without the use of an expensive uninterruptible power supply facility..."

However, the Applicant's position is not that motivation can't be found, but rather that the particular modification suggested by the Examiner, which would cause the claim limitations to be met, cannot be found in the references.

Applicants note that the power supply of Cole is shown in Figure to be *external* from the communication device 12. Accordingly, should one be motivated to modify Cole as suggested by the Examiner, it would appear that the power supply would be modified, not the communication device 12. Any suggestion that one would be motivated to modifying the communication device 12 to include a backup power system can only be found by using hindsight based on the teachings of the present invention.

"Our case law makes clear that the best defense against the subtle but powerful attraction of a hindsight-based obviousness analysis is rigorous application of the requirement for a showing of the teaching or motivation to combine prior art references." Dembiczak, 175 F.3d at 999; see also Ruiz, 234 F.3d at 665 (explaining that the temptation to engage in impermissible hindsight is especially strong with seemingly simple mechanical inventions). This is because "[c]ombining prior art references without evidence of such a suggestion, teaching, or motivation simply takes the inventor's disclosure as a blueprint for piecing together the prior art to defeat patentability—the essence of hindsight." Dembiczak, 175 F.3d at 999. Therefore, we have consistently held that a person of ordinary skill in the art must not only have had some motivation to combine the prior art teachings, but some motivation to combine the prior art teachings in the particular manner claimed. See, e.g., In re Kotzab, 217 F.3d 1365, 1371 (Fed. Cir. 2000)

Applicants respectfully submit that no motivation is shown or suggested by the references to combine Cole and Kamioka in the manner claimed; i.e., by including a backup power in the communication device 12. Accordingly, for at least the reason that there is no motivation for the particular modification suggested by the Examiner, the rejection under 35 U.S.C. §103 is improper and should be withdrawn.

Combination neither describes nor suggests the claimed invention

To establish *prima facie* obviousness of a claimed invention, all the claim limitations must be taught or suggested by the prior art. *In re Royka*, 490 F.2d 981, 180 USPQ 580 (CCPA 1974). "All words in a claim must be considered in judging the patentability of that claim against the prior art." *In re Wilson*, 424 F.2d 1382, 1385, 165 USPQ 494, 496 (CCPA 1970). Applicants submit that the combination of Cole and Kamioka fail to teach or suggest several limitations of the claims.

The present invention is directed to a power integrated network; i.e., a network such as that of 802.3af where both data and power are transmitted simultaneously on a common carrier. Applicants have amended the claims to more clearly recite that the links of the present invention are 'combined power/data' links which deliver both power *and* data simultaneously. Such a limitation clearly distinguishes the present invention from Cole, which explicitly states, at column, lines 22-23 'The communication device 12 uses lines 44 which are *unused...'*

Cole, in fact, explicitly teaches away from the use of combined power/data links at column 1, lines 32-37:

> "Another method for providing power to remote nodes is to superimpose the signaling required for communication with the remote nodes onto the conductors that supply power to the remote nodes. Unfortunately, such a method usually increases the cost of the remote nodes. In addition, such a method usually increases the complexity of the communication circuitry..."

A prior art reference must be considered in its entirety, i.e., as a whole, including portions that would lead away from the claimed invention. *W.L. Gore & Associates, Inc. v. Garlock, Inc.*, 721 F.2d 1540, 220 USPQ 303 (Fed. Cir. 1983), *cert. denied*, 469 U.S. 851 (1984) The Examiner cannot ignore the portions of Cole which teach against the claimed invention.

Accordingly, for at least the reason that the combination of references fails to describe or suggest "... deliver power from energy stored by the electrochemical power source to at least one selected member network via the combined power/data link' claim 1 is patentably distinct over the combination of Cole and Kamioka, and the rejection should be withdrawn.

Independent claims 16, 17, 32, 46 and 47 similarly recite the use of 'combined power/data links' for forwarding data and power to network elements, and are therefore allowable for at least the same reasons as put forth above with regard to claim 1. Dependent claims 2-15, 18-31 and 33-45 serve to add further patentable limitations to their associated parent claims, but are patentable for at least the reason that they depend upon patentable subject matter.

Conclusion

The Applicant has made a diligent effort to place the claims in condition for allowance. However, should there remain unresolved issues that require adverse action, it is respectfully requested that the Examiner telephone the undersigned, Applicants' Attorney at 978-264-6664 so that such issues may be resolved as expeditiously as possible.

For these reasons, and in view of the above amendments, this application is now considered to be in condition for allowance and such action is earnestly solicited.

Respectfully Submitted,

_____ ___/Lindsay McGuinness/_____

Date

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U.S. Patent and Trademark Office: U.S. DEPARTMENT OF COMMERCE

# Applicant Initiated Interview Request Form

Application No.: 09/752,152 First Named Applicant: Jackson
Examiner: Phunkulh Art Unit: 2616 Status of Application: Pending

**Tentative Participants:** Reg: 38,549
(1) Lindsay McGuinness (2) Examiner Phunkulh
(3)_____ (4)_____

**Proposed Date of Interview:** Fri August 18, 2006 **Proposed Time:** 9 (AM/PM)

**Type of Interview Requested:**
(1) [W Telephonic (2) [ ] Personal (3) [ ] Video Conference

**Exhibit To Be Shown or Demonstrated:** [ ] YES [W NO
**If yes, provide brief description:**_____

## Issues To Be Discussed

| Issues (Rej., Obj., etc) | Claims/ Fig. #s | Prior Art | Discussed | Agreed | Not Agreed |
|---|---|---|---|---|---|
| (1) § 103 | 1-4,6-10, | Cole, | [ ] | [ ] | [ ] |
| (2)_____ | 22-35, | Kamioka | [ ] | [ ] | [ ] |
| (3)_____ | 37-47 | _____ | [ ] | [ ] | [ ] |
| (4)_____ | _____ | _____ | [ ] | [ ] | [ ] |

[ ] Continuation Sheet Attached

**Brief Description of Arguments to be Presented:**
Review proposed claim amendments to determine if claim scope is allowable

An interview was conducted on the above-identified application on _____.
**NOTE:** This form should be completed by applicant and submitted to the examiner in advance of the interview (see MPEP § 713.01).
This application will not be delayed from issue because of applicant's failure to submit a written record of this interview. Therefore, applicant is advised to file a statement of the substance of this interview (37 CFR 1.133(b)) as soon as possible.

Lindsay G. McGuinness
Applicant/Applicant's Representative Signature

Examiner/SPE Signature

Lindsay G. McGuinness
Typed/Printed Name of Applicant or Representative

38,549
Registration Number, if applicable